The Relevant Market Paradox—Attempted and Completed Patent Fraud Monopolization

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I. THE RELEVANT MARKET PARADOX

Considerable controversy has centered on the elements of a claim of monopolization or an attempt to monopolize based on patent fraud under section 2 of the Sherman Act.[1]

In *Oetiker v. Jurid Werke, G.m.b.H.*,[2] the Court of Appeals for the District of Columbia, in contrast with several other circuits[3] treated as open the question whether proof that the patent covers a substantial percentage of a "relevant market"[4] is a necessary element of a patent fraud claim.[5] In this paper I argue that a "relevant market" analysis

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1. 15 U.S.C. § 2 (1970).

2. 556 F.2d 1 (D.C. Cir. 1977).

3. *See, e.g.*, Forbro Design Corp. v. Raytheon Co., 532 F.2d 758 (1st Cir. 1976); Acme Precision Prods., Inc. v. American Alloys Corp., 484 F.2d 1237 (8th Cir. 1973); Agrashell, Inc. v. Hammons Prods. Co., 479 F.2d 269 (8th Cir.), *cert. denied*, 414 U.S. 1022 (1973); Beckman Instruments, Inc. v. Chemtronics, Inc., 428 F.2d 555, 567 (5th Cir. 1970); Ekco Prods., Inc. v. Dare Plastics, Inc., 173 U.S.P.Q. 664 (S.D. Ohio 1972).

4. Oetiker v. Jurid Werke, G.m.b.H., 556 F.2d 1, 6 (D.C. Cir. 1977). In its opinion the court quoted from Walker Process Equip., Inc. v. Food Mach. and Chem. Corp., 382 U.S. 172, 177-78 (1965) as follows:

> To establish monopolization or attempt to monopolize a part of trade or commerce under § 2 of the Sherman Act, it would then be necessary to appraise the exclusionary power of the illegal patent claim in terms of the relevant market for the product involved. Without a definition of that market there is no way to measure [the patentee's] ability to lessen or destroy competition. It may be that the device—knee-action swing diffusers—used in sewage treatment systems does not comprise a relevant market. There may be effective substitutes for the device which do not infringe the patent. This is a matter of proof, as is the amount of damages suffered by [the complainant].

Nevertheless, the court reasoned that the Supreme Court's opinion in *Walker Process* left open the issue of whether after a full record had been developed, the Court would hold that the relevant market in a patent fraud case was always coextensive with the claims of the fraudulently obtained patent.

There is some dispute in the circuits concerning the need for a relevant market analysis in attempt cases. *Compare Oetiker with* cases cited in note 3 *supra*. It should be noted, however, that Professor Turner, whose leading article twenty-one years ago argued against the need for relevant market analysis in attempt cases, Turner, *Antitrust Policy and the Cellophane Case*, 70 HARV. L. REV. 281, 305 (1956), has now changed his mind. *See* Turner, *The Scope of "Attempt to Monopolize"*, 30 THE RECORD 487 (1975).

The current status of the law on attempting to monopolize is thoroughly reviewed in Cooper, *Attempts and Monopolization: A Mildly Expansionary Answer to the Prophylactic Riddle of Section Two*, 72 MICH. L. REV. 373 (1974) and Hawk, *Attempts to Monopolize—Specific Intent as Antitrust's Ghost in the Machine*, 58 CORNELL L. REV. 1121 (1973).

5. The question of what conduct before the Patent Office gives rise to a finding of fraud sufficient to support a § 2 claim has been extensively treated in the literature. *See generally*, C. HAMBURG, PATENT FRAUD AND INEQUITABLE CONDUCT (1974); Kayton, Lynch and Stern, *Fraud in Patent Procurement: Genuine and Sham Charges*, 43 GEO. WASH. L. REV. 1 (1974). My views on this subject are found in Adelman and Brooks, *The Integrity of the Administrative Pro-*

should not be an element because of a basic incompatibility between the usual test of monopoly power and a section 2 offense based on patent fraud.[6]

Section 2 of the Sherman Act relates to monopolization and attempts and conspiracies to monopolize.[7] This provision is the most controversial and opaque of all the antitrust laws, a result of inherent difficulties in identifying and explaining the origin, once found, of monopoly power. Fortunately, these difficulties may be readily avoided when section 2 is properly applied to cases of patent fraud.

The economic argument against monopoly is based on the tendency of a monopoly to create higher prices and lower output than would occur under competition.[8] However, identifying monopoly pricing is often difficult.[9] To understand why this is so, imagine observing the commercial world with the aim of identifying firms engaged in monopoly pricing without being aware of any relevant commercial history. Focus must be placed on factors that economic science has identified as suggestive of monopoly pricing. One such factor is price discrimination. Yet even setting aside the difficulties that may exist in its identification, price discrimination may only be the result of prices moving

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cess, Sherman Section 2 and Per Se Rules—Lessons of Fraud on the Patent Office, 19 WAYNE L. REV. 1 (1972).

6. I have previously argued that the definition of monopoly power employed in § 2 cases, *i.e.*, the power to raise prices or exclude competitors, automatically eliminated any need for any "relevant market" analysis in patent fraud cases. Adelman and Brooks, *supra* note 5, at 9-11. There the arguments made were essentially legal. This paper reaches the same conclusion based on an economic analysis of the notion of a "relevant market."

7. 15 U.S.C. § 2 provides:

> Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be punished by fine not exceeding fifty thousand dollars, or by imprisonment not exceeding one year, or by both said punishments, in the discretion of the court.

8. A vigorous challenge to this economic case against monopoly and cartelization has been prompted by the recent discovery in the legal literature by Professors Markovits and Sullivan of the 20 year old economic doctrine of "second best." *See* Markovits, *A Response to Professor Posner*, 28 STAN. L. REV. 919 (1976); Sullivan, Book Review, 75 COLUM. L. REV. 1214 (1975).

Professor Posner explains that in its simplest form the theory of second best "is that if the substitutes for a monopolized product are not being sold at prices equal to their costs, the elimination of the monopoly may encourage rather than discourage inefficient substitution." R. POSNER, ANTITRUST LAW: AN ECONOMIC PERSPECTIVE 13-14 (1976) [hereinafter cited as POSNER, ANTITRUST LAW]. The change in relative costs due to the elimination of monopoly pricing of goods produced by only one firm in a market may lead to substitution of goods that are produced at higher social costs than the former monopoly priced goods.

The arguments based on the "second best" challenge to the conventional case against monopoly are effectively met by Professor Posner. *Id.* at 8-22, 237-55; Posner, *The Social Costs of Monopoly and Regulation*, 83 J. POL. ECON. 807 (1975).

9. Professor Posner discusses the problems of identifying monopoly pricing brought about by joint action in POSNER, ANTITRUST LAW, *supra* note 8, at 39-77. Identifying individual rather than joint monopoly pricing on economic grounds is even more difficult because of the lack of evidence based on joint parallel conduct. *See also* F. SCHERER, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 50-52 (1970).

toward a new equilibrium.[10] Another economic indicium of monopoly pricing occurs when a firm prices on the elastic portion of its demand curve and there is a substantial differential between the selling price and cost.[11] Unfortunately, it is usually very difficult to learn the shape of the demand curve facing the firm. Even if this obstacle could be overcome, the resulting profits may be merely the result of the riskiness of the needed investment. Another economic indicator is a "natural monopoly," occuring when average costs decline substantially with volume over the relevant portion of the industry's demand curve.[12] Aside from the natural monopoly situation, economic science finds it difficult if not impossible to determine, without access to a firm's history, whether it is engaging in monopoly pricing.

History, however, can at times substitute for or supplement a search for monopoly pricing centered on an economic analysis of pricing and costs. First, if firms having substantial market shares in an industry merge, this may suggest that the merger was designed to permit monopoly pricing. In this way a discrete event—one which causes a considerable and sudden shift in industry structure—may lead to monopoly pricing. Alternatively, government action may create monopoly pricing. The government, for example, within a short period of time may have put various competing firms out of business and announced that no entry would be allowed. Monopoly pricing can be expected to ensue.

The Supreme Court, in interpreting section 2, infers monopoly power if a firm controls a substantial percentage of a "relevant market."[13] The basic economic tool used in determining the "relevant market" is the concept of cross-elasticity of demand. Competing products where the cross-elasticity is high are treated as reasonably interchangeable and thus part of the "relevant market."[14] But cross-elasticity is a

10. POSNER, ANTITRUST LAW, *supra* note 8, at 62-66.

11. Monopoly pricing is always carried out on the elastic portion of the monopolist's demand curve since by definition its maximum total revenue lies along that portion of the curve. Demand conditions may cause similar pricing even under competition. But if there is also a substantial disparity between price and costs, then the inference that monopoly pricing is occurring is strong.

12. In a natural monopoly situation, the service or goods can be provided more efficiently by one firm than by many competing firms. Natural monopolies generally occur in highly capital-intensive industries such as telephone communications or in production and distribution of electric power. *See* F. SCHERER, *supra* note 9, at 519-20; Posner, *Natural Monopoly and Its Regulation*, 21 STAN. L. REV. 548 (1969).

13. In United States v. Grinnell Corp., 384 U.S. 563, 570-71 (1966), the Court said:

> The offense of monopoly under § 2 of the Sherman Act has two elements: (1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.

The percentage of the relevant market deemed to allow an inference of monopoly power is unsettled. *See generally* Cliff Food Stores, Inc. v. Kroger, Inc., 417 F.2d 203, 207 n.2 (5th Cir. 1969).

14. The leading case using the reasonable interchangeability test based on an analysis of cross-elasticity of demand, *i.e.*, the responsiveness of the sales of one product to the price changes of the others, is United States v. E.I. duPont de Nemours & Co., 351 U.S. 377 (1956).

function of the price chosen by the firm under suspicion of having monopoly power in a product market.[15] The higher the price chosen by the alleged monopolist, the greater the cross-elasticity of demand with respect to substitute products so that the "relevant market" will include more products. Hence, the firm's percentage of the relevant market will be lower.

Consider the landmark case of *United States v. E.I. duPont de Nemours and Co.*[16] There duPont was charged with monopolizing cellophane. The government argued that duPont had monopoly power because it controlled almost seventy-five percent of the cellophane market. The Supreme Court found that duPont did not have monopoly power since it had less than twenty percent of the flexible packaging market. The latter included waxed paper, glassine, vegetable parchment, greaseproof, and pliofilm, all of which were deemed "reasonably interchangeable" with cellophane. They may have been reasonably interchangeable, however, precisely because duPont was engaging in monopoly pricing of cellophane.[17]

Thus duPont, if indeed monopolizing, may have been found not to have monopoly power because it exercised its monopoly power by charging a price that would increase the cross-elasticity of demand. On the other hand, had it refrained from exercising this power by charging a competitive price, it might then have been found to have possessed monopoly power. This poses the paradox that the test of monopoly power used by courts suggests monopoly only if unexercised. But unexercised monopoly power is irrational even in the absence of

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15. Technically, cross-elasticity relates the percentage change in the quantity demanded of one good (*i.e.*, the one in which the charge of monopoly is involved) to the percentage change in price of another good. It measures the sensitivity to the price of substitutes. As a monopolist raises the price of his product, buyers become more interested in and more sensitive to price changes in substitute products. *See* POSNER, ANTITRUST LAW, *supra* note 8, at 128.

16. 351 U.S. 377 (1956).

17. The defect in the reasonable interchangeability test was recognized at the time it was announced by Professor Turner in Turner, *Antitrust Policy and the Cellophane Case*, 70 HARV. L. REV. 281 (1956). Professor Turner said:

> As I have noted, the Court's "reasonable interchangeability" test in *Cellophane* for defining the market with respect to distinct substitutes could mean either of two things. First, it may mean that distinct substitutes showing a cross-elasticity of demand at prices that have actually been charged are to be included in the market even though produced at a substantial margin of disadvantage. Second, the test may incorporate a consideration of costs, so that these substitutes will be excluded where the Government shows that at prices producing a high cross-elasticity the alleged monopolist has a substantial cost advantage.
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> The first version . . . would be plainly wrong as a purported test of monopoly power. . . . This version of the test would insulate many "true" monopolies from the impact of the antitrust laws.

Id. at 308-09.

Unfortunately, at least in patent fraud cases if not generally, the first version of the test has been adopted rather than the second and correct version. Had the latter been adopted, the monopoly power of a patent would be measured by the actual royalties charged by the patentee or if the patentee refuses to license, then by the implicit royalty built into the patentee's price structure.

section 2. Nevertheless, section 2, as interpreted, penalizes unexercised power at least if there is an intent to exercise it.[18] Patent fraud cases demonstrate this paradox in pristine form.

II. Patents and Monopoly Power

Rights granted to a patentee are greater than those possessed by an ordinary property owner. Conventionally, property is the result of efforts by its current or previous owners, but others are free to create and use similar property. But once a patent has been granted, even independent development and use by others is prohibited.[19] Thus, it is a true monopoly whose existence leads to a higher price charged for the patented product, or for products made by a patented process, than would be charged in its absence. So patents do indeed raise prices and reduce output over what would occur under free competition. To seek a patent is an attempt to acquire the right to engage in monopoly pricing. Once this right is obtained, enforcing it or threatening to do so is equivalent to either a continuation of the attempt or a protection of actual monopoly pricing.

The seminal case of *Walker Process Equipment, Inc. v. Food Machinery & Chemical Corp.*[20] arguably implied that a "relevant market" analysis is necessary to establish a patent fraud monopolization claim. *Walker Process* can best be understood after a brief review of the process of obtaining a patent from the United States Patent Office. Currently, all proceedings except interferences are ex parte. The process is initiated by filing for a patent and the application is then examined by the Patent Office. This examination includes a search for the relevant prior art. Although a large portion of the legal prior art exists in printed form in the Patent Office, there is for each application only a limited amount of time to search for relevant prior art. It is possible that an applicant may be aware of relevant prior art existing in the Patent Office but not turned up by the Patent Office during its limited search. More significantly, the applicant may be aware of relevant prior art that is not available in any form in the Patent Office. Such was the situation in *Walker Process*.

The case began as a conventional patent infringement case filed by the owner of the patent, Food Machinery, against an alleged infringer, Walker Process. Walker Process subsequently learned that the patent was invalid because Food Machinery had sold a machine employing the patented invention more than a year before the filing of the patent application.[21] Food Machinery moved to dismiss the suit and Walker

18. American Tobacco Co. v. United States, 328 U.S. 781 (1946).

19. The United States patent laws do not provide any defense to a patent infringement suit based on independent invention. 35 U.S.C. § 271 (1970).

20. 382 U.S. 172 (1965). *See* note 4 *supra*.

21. 35 U.S.C. § 102 (1970) reads in part: "A person shall be entitled to a patent unless . . .

Process filed a counterclaim under section 2 of the Sherman Act based on fraud on the Patent Office. The district court's dismissal of both the infringement suit and the counterclaim was affirmed by the Court of Appeals for the Seventh Circuit.[22] Both courts concluded that no claim of unlawful monopolization or attempt thereof could be based on fraud on the Patent Office. The Supreme Court reversed, holding that such a claim could be established. Because it was unclear, however, whether the patented device comprised a relevant market and because substitutes for the patented product may have existed, the Court refused to find on the pleadings before it that fraud on the Patent Office was a per se offense.

Thus, in *Walker Process*, since the invalidating event was the public use more than a year before the filing of the patent application, the Patent Office, even if it had conducted the most thorough search of its documents, could not have become aware of the unpatentability of the Food Machinery invention. Moreover, no potential infringer could go to the Patent Office and discover it.[23] Even though only one piece of prior art was involved, which unquestionably invalidated the patent, and the patentee knew that the patent would be invalid if the appropriate information ever came to light, the Supreme Court arguably implied that for a section 2 violation more must be shown, that is, the patent had to be shown to cover a relevant product market.[24]

Consider why this additional requirement is wrong. First, the fact that the patent was taken out by Food Machinery evidences an intent by it to cause higher prices and lower output than would otherwise have occurred. Otherwise Food Machinery would not have paid the costs of obtaining patent protection in the Patent Office and of enforcing it in the courts. Thus, the patent had value. Perhaps the patent did not permit a high enough monopoly price to constitute monopolization since the patented product may have competed with a sufficient number of substitutes so that the patentee could not raise its price substantially above the competitive level. Yet monopoly pricing is involved whenever a patent has value. Once it is established that a patent has value, and that it therefore conveys *some* monopoly power, there is no need to determine the quantity of that power. The view that a relevant market analysis is necessary in monopolization cases based on patent fraud is, therefore, bereft of sound intellectual footing.[25]

(b) the invention was . . . in public use or on sale in this country more than one year prior to the date of the application for patent in the United States. . . ."

22. Food Mach. & Chem. Corp. v. Walker Process Equip., Inc., 335 F.2d 315 (7th Cir. 1964), *rev'd*, 382 U.S. 172 (1965).

23. Other than the rarely used "public use proceedings" authorized by 37 C.F.R. § 1.292 (1976), knowledge of acts such as public uses or sales is not available to the Patent Office.

24. *See* note 4 *supra*.

25. In essence, the law has taken the wrong turn by defining cross-elasticity independent of costs. *See* Turner, *supra* note 17, at 309 *and* POSNER, ANTITRUST LAW, *supra* note 8, at 128.

A good illustration of this absurdity is found in *Acme Precision Products, Inc. v. American Alloys Corp.*[26] The case began in the conventional way as a suit by Acme Precision Products, Inc. [hereinafter Acme], the owner of a patent covering an alloy known as Almag 35, and Acme's exclusive licensee, William F. Jobbins, Inc. The defendant American Alloys Corporation [hereinafter American] was charged with infringement based on its product, Amalloy. In addition to the usual defenses, American filed a section 2 counterclaim based on patent fraud, asserting that Almag 35 was in public use more than a year before the filing of the patent application covering it and that plaintiffs were aware of this public use during the prosecution of the patent application before the Patent Office.

The evidence introduced at trial showed that the plaintiffs had vigorously enforced the patent. All of the primary producers of aluminum in the United States had been forced by notices of infringement and threats of suit to take licenses under it and to pay a royalty of forty dollars per ton on all patented alloys produced. Plaintiffs made every possible effort to stifle unlicensed production of the patented alloy. While no evidence was offered on this point, economic theory would suggest that a royalty was built into the price of the patented alloy so that purchasers were paying roughly forty dollars per ton more than they would have in the absence of the patent.[27] The lower court on these facts had no difficulty finding that the patent defined the relevant market even though for many applications substitute alloys, known in the trade as 218 alloys, were available at a lower price.

The appeals court indicated that it was convinced that all of the cheaper 218 alloys had to be included in the relevant market because of the record of competitive interchangeability between them and the patented alloy. No evidence was available concerning what would have happened in the market if the forty dollar per ton royalty had not been part of the patented alloy's price structure.

The court then summed up as follows:

> The argument that buyers would not pay the royalties for Almag 35 if it did not constitute a separate market is unconvincing. Use of a specific product turns on many variables determined by the individual preferences of the specific buyer. Thus, as in *duPont*, buyers may prefer cellophane because of its alleged superior qualities over some other flexible wrapper and be willing to pay a higher price. Yet this does not of itself place cellophane in a separate market. The "end use" of a product has a greater influence on the determination of "cross-elasticity" than the higher price of a more desirable product.[28]

Once costs are examined the issue of monopoly is determined by the decision to compare or refrain from comparing substitutes.

26. 347 F. Supp. 376 (W.D. Mo. 1972), *rev'd*, 484 F.2d 1237 (8th Cir. 1973).

27. *See generally* W. BOWMAN, PATENT AND ANTITRUST LAW 66-70 (1973).

28. 484 F.2d at 1244.

The appeals court clearly overlooked the fact that the higher price of the patented alloy was due at least in part to the unlawful monopoly power exercised by the plaintiffs. Whether that was also the reason for the higher price of cellophane was unanswered by the Supreme Court and could not be answered using the "cross-elasticity" methodology.

III. Attempts and Actual Monopolization Compared

The previous analysis of the relevant market paradox applies only to completed monopolizations. Attempt cases, which require a showing of intent to bring about a monopoly coupled with a dangerous probability of success,[29] should be subjected to a different though related analysis. This may be illustrated in the following manner. Assume that a new product is being made under competitive conditions. A proposed merger of all of the producers, if challenged as an attempt to monopolize, should be judged using a relevant market determined by the product's reasonable interchangeability at the premerger price. If the claimed violation is actual monopolization through merger, then the relevant market clearly should be determined using the premerger rather than the postmerger price. Similarly, if a producer intends through fraud to patent a new product that is currently being made under competitive conditions, then competing products cannot be responsible for the competitive price level since in the face of these substitutes the producer seeking the patent intends to raise the price of the product in order to make the act of obtaining the patent profitable. It would seem that the mere seeking of a patent, with the intent to employ fraud in doing so, would supply both elements of intent to monopolize and dangerous probability of success. In any event, the competitive price level is determined through competition among the producers, the elimination of which will provide the patentee with monopoly profits. If the patent were valueless, then substitutes would hold down the price even if a patent were obtained and only in that circumstance would the appropriate relevant market include such substitutes. In short, the pursuit of a valueless patent cannot lead to control of a substantial portion of a relevant market. But if the patent has value, then the relevant market should be co-extensive with the patent itself because the substitutes could not control the price at the competitive level. Only if the relevant market is measured as if success had already been achieved—i.e., prices had risen to a monopoly level—would the attempt offense fail because, if successful, the patentee would be found to be devoid of monopoly power.

Ironically, the foregoing analysis suggests that a relevant market analysis is appropriate only for attempt to monopolize cases, and not for

29. *See, e.g.*, American Tobacco Co. v. United States, 328 U.S. 781 (1946); Swift and Co. v. United States, 196 U.S. 375 (1905).

those of completed monopolization, yet the controversy in section 2 law has centered on claims that it is section 2 attempt cases that can dispense with a relevant market analysis. The District of Columbia Circuit has explained this dispute as follows:

> The disagreement over the significance of the *Walker Process* opinion is part of a larger controversy over whether proof of market share ought to be a necessary element of a claim of attempted monopolization under Sherman § 2. . . . The prevailing view is that a plaintiff must establish a "dangerous probability" of successful monopolization . . . and therefore must define the relevant market and show that the defendant exercises some control over it. . . . The Ninth Circuit has taken a different view—that although evidence of market share may be relevant, a "dangerous probability of success" can be inferred from a specific intent to set prices or exclude competition in a portion of the market without a legitimate business purpose. . . .[30]

The court went on to point out that the Ninth Circuit's view, while generally unacceptable, may have merit in patent fraud cases because patent fraud has no redeeming social value. Thus, it should be a per se violation. In essence, the court suggests that the law should be revised only in patent cases because the *Walker Process* rule leads to the wrong result. Perhaps for the reasons suggested earlier a more extensive revision of section 2 law should be made.

IV. Conclusion

It is time that the courts recognize that patents are monopolies and that obtaining them by wrongful means violates the statute against monopolization. Currently, if the relevant market is measured after a patent becomes valuable owing to a price increase, monopoly under the usual test will not be found. Hence, the relevant market test is of limited usefulness. Relevant market analysis has value only in attempt cases, where there is no issue of actual monopoly pricing. In these cases, the relevant issue is whether there is a dangerous probability of an artificially created rise in what otherwise would be the price level, and an analysis of the relevant market may aid in the determination of this issue. Relevant market analysis is rarely helpful, however, in actual monopolization cases, in which the issue is whether prices are currently maintained at an artificially high level. In patent monopolization cases the existence of a patent wrongfully obtained should be the only evidence needed on the question of the existence of monopoly power.

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30. Oetiker v. Jurid Werke, G.m.b.H., 556 F.2d 1, 7-8 (D.C. Cir. 1977) (footnotes deleted).